

# How to Read and Translate Risk and Safety Vernacular Phrases in Technical Texts

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# R & S Phrases

## Topics for Today

- R & S Phrases
  - What are they and where do they come from
  - Where are they found
  - Examples
  - Not literal translations!
- Hazard and Precautionary Statements
  - What are they and where do they come from
  - Comparisons
- Resources

# R & S Phrases

What are they?

R-phrases (short for Risk Phrases) are defined as *special risks attributed to dangerous substances and preparations*

S-phrases (short for Safety Phrases) are defined as *safety advice concerning dangerous substances and preparations*

# R & S Phrases

What are they specifically?

- Phrases of 1-13 words to describe risk and safety aspects of dangerous substances
- Associated with identifying letter-number codes for brevity

Examples:

R10 – Flammable

R3 – Extreme risk of explosion by shock, friction, fire or other sources of ignition

S2 – Keep out of the reach of children

- Combinations also used

# R & S Phrases

Where do they come from?

*Before the EU...*

**European Coal and  
Steel Community**



# R & S Phrases

## European Coal and Steel Community (ECSC, 1951-2002)

France, Germany (1 of 2), Italy, Benelux

1957 - list of commercial chemical substances, and  
a set of phrases in 4 languages [DE, FR, IT, NL; the ECSC  
member states ] to include with packaging to describe:  
risks [Gefahren/risques/rischi/gevaren]  
safety [Sicherheit/prudence/prudenza/veiligheid]

# R & S Phrases

Where do they come from?

as the ECSC segued into the EU ( $\Rightarrow$  2002)  
new legislative bases established.

New versions of the R- and S-phrases created for use on  
product labels, defined in

Annexes III & IV of **EU Directive 67/548/EEC**

8 categories of dangerous compounds  
23 categories of substances

# R & S Phrases

## EU Directive 67/548/EEC:

*“Approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances which are placed on the market in the Member States of the Community.”*

Annex I: notes, names of elements and substance classes

Annex II: danger symbols (pictograms)

Annex III: risk phrases

Annex IV: safety phrases

In 11 European languages

[ ES, DA, DE, EL, EN, FR, IT, NL, PT, FI, SV ]



# R & S Phrases

## Where do they come from?

The scope, content, definitions, etc. underwent evolution

- Consolidated & expanded in **EU Directive 2001/59/EC**
- Further updated in **EU Directive 2006/102/EC**

Defined:

21 categories of substances

10 categories of hazard (with identifying symbols and pictograms)

# R & S Phrases

EU Directive 2006/102/EC:

Annex I: notes, names of elements and substance classes

Annex II: danger symbols (pictograms)

Annex III: risk phrases

Annex IV: safety phrases

Now in 22 European languages

[ BG, CS, DA, DE, EL, EN, ES, ET, FI, FR, HU, IT, LT, LV,  
MT, NL, PL, PT, RO, SK, SL, SV ]

# R & S Phrases

## Example: R10

<b>BG</b>	Запалим	<b>LT</b>	Degi
<b>CS</b>	Hořlavý	<b>HU</b>	Kis mértékben tűzveszélyes
<b>DA</b>	Brandfarlig	<b>MT</b>	Jieħu n-nar
<b>DE</b>	Entzündlich	<b>NL</b>	Ontvlambaar
<b>EL</b>	Εύφλεκτο	<b>PL</b>	Produkt łatwopalny
<b>EN</b>	Flammable	<b>PT</b>	Inflamável
<b>ES</b>	Inflamable	<b>RO</b>	Inflamabil
<b>ET</b>	Tuleohtlik	<b>SK</b>	Horľavý
<b>FR</b>	Inflammable	<b>SL</b>	Vnetljivo
<b>IT</b>	Infiammabile	<b>FI</b>	Syttyvää
<b>LV</b>	Uzliesmojšs	<b>SV</b>	Brandfarligt

# R & S Phrases

Where are they found?

- Product labels, shipping manifests
- MSDS/SDS/PSDS sheets and documentation
- Manufacturing instructions and batch records
- Legislation and regulations related to the above

# Example – Herbicide Label

PEEL BACK FOR DIRECTIONS FOR USE LEAFLET 

**RouteOne Rosate 36**  **20 Litre**   
 MAPP 13889 **PROTECT FROM FROST**

A soluble liquid herbicide containing 360 g/litre glyphosate acid present as 480 g/litre (41.5% w/w) isopropylamine salt and polyoxyethyleneamine surfactant.  
 A foliar-applied, translocated herbicide for the control of annual and perennial weeds in a range of agricultural, horticultural, forestry, industrial, amenity and aquatic situations.



**IRRITANT**



**DANGEROUS FOR THE ENVIRONMENT**

RouteOne Rosate 36 – contains 480 g/litre (41.5% w/w) glyphosate isopropylamine salt and polyoxyethyleneamine.

**IRRITATING TO SKIN  
 TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM  
 ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT**

KEEP OUT OF THE REACH OF CHILDREN  
 KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS  
 WHEN USING DO NOT EAT, DRINK OR SMOKE  
 AVOID CONTACT WITH EYES  
 IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND  
 SEEK MEDICAL ADVICE  
 USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION  
 THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY  
 To avoid risks to man and the environment, comply with the instructions for use.

The Control of Substances Hazardous to Health (COSHH) Regulations may apply to the use of this product at work.

**IMPORTANT INFORMATION**

FOR USE ONLY AS AN AGRICULTURAL/HORTICULTURAL/INDUSTRIAL/AMENITY/FORESTRY HERBICIDE.

**Crops:** Wheat, durum wheat, barley, oats, oilseed rape, combining pea, mustard, field bean, linseed, sugar beet, swede, turnip, onion, leek, stubbles of all crops, grassland, hard surfaces, natural surfaces not intended to bear vegetation, permeable surfaces, overlying soil, all edible and non-edible crops (destruction of established vegetation prior to sowing or planting), apple, pear, plum, cherry, damson, enclosed waters, open waters, land immediately adjacent to aquatic areas, forest and farm forestry (weed control and chemical thinning by stump application and injection).

Maximum Individual Dose per hectare, Maximum Total Dose per hectare, Maximum Number of Treatments, Latest Time of Application, Other Specific Restrictions: ) See under ) "Directions for Use"

**READ THE LABEL BEFORE USE. USING THIS PRODUCT IN A MANNER THAT IS INCONSISTENT WITH THE LABEL MAY BE AN OFFENCE. FOLLOW THE CODE OF PRACTICE FOR USING PLANT PROTECTION PRODUCTS.**

**SAFETY PRECAUTIONS**

**Operator protection**

Engineering control of operator exposure must be used where reasonably practicable in addition to the following personal protective equipment:

- WEAR SUITABLE PROTECTIVE GLOVES AND FACE PROTECTION (FACESHIELD) when handling or applying the concentrate.
  - WEAR SUITABLE PROTECTIVE CLOTHING (WATERPROOF JACKET AND TROUSERS), SUITABLE PROTECTIVE GLOVES AND RUBBER BOOTS when using a knapsack sprayer, hand-held rotary atomiser CDA sprayer and hand-held weedwiper equipment.
  - WEAR SUITABLE PROTECTIVE CLOTHING (WATERPROOF JACKET AND TROUSERS), SUITABLE PROTECTIVE GLOVES, RUBBER BOOTS AND FACE PROTECTION (FACESHIELD) when using spot-gun equipment, making out-stump treatments or carrying out stem injection.
- However, engineering controls may replace personal protective equipment if a COSHH assessment

- shows they provide an equal or higher standard of protection.
- WASH CONCENTRATE from skin or eyes immediately.
- DO NOT BREATHE SPRAY.
- WASH HANDS AND EXPOSED SKIN before eating and drinking and after work.
- WASH ALL PROTECTIVE CLOTHING thoroughly after use, especially the insides of gloves.

**Environmental protection**

Do not contaminate water with the product or its container except when used as directed. Do not clean application equipment near surface water. Avoid contamination via drains from farmyards and roads.

**Storage and disposal**

KEEP IN ORIGINAL CONTAINER, tightly closed, in a safe place.  
 RINSE CONTAINER THOROUGHLY by using an integrated pressure rinsing device or manually rinsing three times. Add washings to sprayer at time of filling and dispose of the container safely.

**For advice on medical emergencies, fires, spillages or chemical hazards, telephone: 0208 762 8322 (24 hour)**

UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains glyphosate and polyoxyethyleneamine); Class 9; Packing group III.

**Approval Holder and Marketing Company:**  
**Albaugh UK Ltd., Manor Farm, Eddlethorpe, Malton YO17 9QT Tel: 01653 658 657 Fax: 01653 658 050**

PEEL BACK FOR DIRECTIONS FOR USE LEAFLET 

Rosate 36, a glyphosate-based herbicide manufactured by Hughie Willet in the UK


# Example – Glyphosate

## Risk & safety phrases

<b>R38</b>	<b>IRRITATING TO SKIN</b>
<b>R51/53</b>	<b>TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT</b>
<b>S2</b>	<b>KEEP OUT OF THE REACH OF CHILDREN</b>
<b>S13</b>	<b>KEEP AWAY FROM FOOD, DRINK AND ANIMAL FEEDING STUFFS</b>
<b>S20/21</b>	<b>WHEN USING DO NOT EAT, DRINK OR SMOKE</b>
<b>S25</b>	<b>AVOID CONTACT WITH EYES</b>
<b>S26</b>	<b>IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE</b>
<b>S57</b>	<b>USE APPROPRIATE CONTAINMENT TO AVOID ENVIRONMENTAL CONTAMINATION</b>
<b>S35</b>	<b>THIS MATERIAL AND ITS CONTAINER MUST BE DISPOSED OF IN A SAFE WAY</b>

# Example – Ácido Clorhídrico

## Risk & safety phrases

	<b>ÁCIDO CLORHÍDRICO 35 %.</b>		1l. = 1,18 kg 1kg. = 0,85 l. Densidad a 15/4. 1,180-1,185	aproximada l/kg en líquidos
	(22° Bé.) d ≈ 1,18 purísimo			
<b>CORROSIVO</b>	HCl	P. m. = 36,47	<b>LÍMITE MÁXIMO DE IMPUREZAS</b>	
	▲ fórmula	▲ peso molecular	Residuo de calcinación	
R34 Provoca quemaduras. R37 Irritante para las vías respiratorias. S2 Mantener alejado del alcance de los niños. S26 En caso de contacto con los ojos, lavarlos inmediatamente con mucha agua y consultar a un médico.			(en SO <sub>4</sub> ) ..... 0,005 %	
			Cloro (Cl)..... 0,001 %	
			Bromuro (Br)..... 0,01 %	
			Sulfato (SO <sub>4</sub> ) ..... 0,0005 %	
			Sulfito (SO <sub>3</sub> ) ..... 0,0005 %	
			Amonio (NH <sub>4</sub> ) ..... 0,001 %	



# Example – Alcool Isopropylique

## Risk & safety phrases

**BRENNTAG** **BRENNTAG S.A.**  
90, Avenue du Progrès  
69680 CHASSIEU  
Tél. 0 800 07 42 28



**ALCOOL  
ISOPROPYLIQUE  
NATURE**

R 11 - S 7 - S 16

F - FACILEMENT INFLAMMABLE

**FACILEMENT INFLAMMABLE.**  
Conserver le récipient bien fermé.  
Conserver à l'écart de toute flamme ou source d'étincelles -  
Ne pas fumer.

Etiquetage CE N° 200-661-7 21° Apt. de la directive 67/548 CE

R11  
S7  
S16



# R & S Phrases

Chemical substance trade is international

Extends far beyond the EU

Nations outside the EU  
adopted / adapted / generated  
R & S phrases for their own use

# R & S Phrases

## Russian Equivalents

<b>R1</b>	В сухом виде взрывоопасно	Explosive when dry
<b>R23</b>	Токсично при вдыхании	Toxic by inhalation
<b>R43</b>	Может вызвать сенсibilизацию при попадании на кожу	May cause sensitisation by skin contact
<b>S18</b>	Обращаться и вскрывать с осторожностью	Handle and open container with care.
<b>S20</b>	Не принимать пищу и напитки при работе с материалом	When using do not eat or drink
<b>S27</b>	Немедленно снять всю загрязненную одежду	Take off immediately all contaminated clothing.

# R & S Phrases

## Japanese Equivalents

<b>R1</b>	乾燥すると爆発する	Explosive when dry
<b>R23</b>	吸入すると毒性がある	Toxic by inhalation
<b>R43</b>	皮膚接触により感作性を引き起こすおそれがある	May cause sensitisation by skin contact
<b>S18</b>	取り扱いおよび容器を開ける際には注意する	Handle and open container with care.
<b>S20</b>	使用中は飲食厳禁	When using do not eat or drink
<b>S27</b>	汚染された衣服は直ちに脱ぎ去ること	Take off immediately all contaminated clothing.

# R & S Phrases

## Chinese Equivalents

<b>R1</b>	干燥时易爆	Explosive when dry
<b>R23</b>	吸入有毒	Toxic by inhalation
<b>R43</b>	皮膚接觸可能導致過敏	May cause sensitisation by skin contact
<b>S18</b>	小心處理容器與開啟容器	Handle and open container with care.
<b>S20</b>	使用中嚴禁飲食	When using do not eat or drink
<b>S27</b>	立即脫去被污染了的衣服	Take off immediately all contaminated clothing.

# R & S Phrases

## Korean Equivalents

<b>R1</b>	건조한 상태에서 폭발성을 가짐	Explosive when dry
<b>R23</b>	흡입 시 유독함	Toxic by inhalation
<b>R43</b>	피부 접촉 시 민감한 영향을 줌	May cause sensitisation by skin contact
<b>S18</b>	취급 및 용기를 열 때 주의	Handle and open container with care.
<b>S20</b>	사용 중 취식 금지	When using do not eat or drink
<b>S27</b>	오염된 옷은 즉시 벗는다	Take off immediately all contaminated clothing.

# R & S Phrases

## Esperanto Equivalents

<b>R1</b>	Eksplodema kiam seka	Explosive when dry
<b>R23</b>	Toksa kiam inhalita	Toxic by inhalation
<b>R43</b>	Povas kaŭzi sentokapablon dum haŭtokontakto	May cause sensitisation by skin contact
<b>S18</b>	Manipulu kaj zorge malfermu kemiujon	Handle and open container with care.
<b>S20</b>	Ne manĝu nek drinku dum manipulado	When using do not eat or drink
<b>S27</b>	Tuje deprenu ĉian malpuran vestaĵaron	Take off immediately all contaminated clothing.

# R & S Phrases

## Latin?

R22: *Harmful if swallowed*  
~ Noxiam esse, si absorbeatur

ᶑᶑᶑᶑᶑ ᶑᶑᶑ (Klingon)?

R22: *Harmful if swallowed*  
~ joch vaj ghup

ᶑᶑᶑᶑᶑ ᶑᶑᶑ

# R & S Phrases

Literal translations don't always work!

The phrasing is standardized, but not necessarily what a translator would consider equivalent.

For example: **R15 (DE)**

***Reagiert mit Wasser unter Bildung leicht entzündlicher Gase***

This could be translated into English literally as:

*Reacts with water to form readily flammable gases*

But the standardized form is:

***Contact with water liberates extremely flammable gases***



# R & S Phrases

Literal translations don't always work!

Another example: **R33** (JA)

くりかえし蓄積すると危険なもの

This could be translated into English literally as:

*Repeated accumulation is hazardous*

But the standardized form is:

***Danger of cumulative effects***

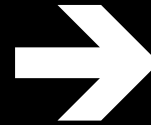
# R & S Phrases



# H & P Statements

Transition

EU-based → UN-based system



# H & P Statements

What are they?

H-statements (short for Hazard statements)

defined as:

*standardized phrases about the hazards of chemical substances and mixtures that can be translated into different languages*

P-statements (short for Precautionary statements)

defined as:

*standardized phrases giving advice about the correct handling of chemical substances and mixtures, which can be translated into different languages*

# H & P Statements

Where do they come from?

## **Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

[ [http://www.unece.org/trans/danger/publi/ghs/ghs\\_welcome\\_e.html](http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html) ]

[ <https://www.osha.gov/dsg/hazcom/global.html> ]

[ <http://www.hse.gov.uk/chemical-classification/index.htm> ]

[ [http://www.meti.go.jp/policy/chemical\\_management/int/ghs\\_text.html](http://www.meti.go.jp/policy/chemical_management/int/ghs_text.html) ]

# H & P Statements

## GHS

Developed by the UN, beginning in 1992 to harmonize and supersede the separate systems currently used in the EEC, the Americas, and other regions

17 physical hazard categories

10 health hazard categories

2 environmental hazard categories (aquatic toxicity and ozone layer)

# H & P Statements

## Why GHS?

**The goal of the GHS system is that:**

*...existing systems should be harmonized in order to develop a single, globally harmonized system to address classification of chemicals, labels, and safety data sheets.*

First version released in 2003

Updated every two years since then

Final (voluntary) adoption deadlines differ by country

Optional in Mexico (June 2011), alternative to national system

For the US, final adoption by June 1, 2015

# H & P Statements

EU homologated the GHS system  
into their new CLP Regulation (2008)  
(Classification, Labelling and Packaging)

Additional EU-H statements  
(unrepresented R-phrase substitutes)

# H & P Statements

## Hazard statements:

**H200 – H413**

(EEC added EUH 001 – EUH 401 to correlate with R-phrases)

## Precautionary statements:

**P101 – P501**

Initially published in 2003 in 6 official UN languages  
[AR, EN, ES, FR, RU, ZH]

EU CLP version published in 2008  
In 24 EU languages



# H & P Statements

## Example: H310

<b>Arabic</b>	سامة إذا ابتلعت	<b>French</b>	Toxique en cas d'ingestion
<b>Chinese</b>	吞咽会中毒	<b>Russian</b>	Токсично при проглатывании
<b>English</b>	Toxic if swallowed	<b>Spanish</b>	Tóxico en caso de ingestión

## Example: P234

<b>Arabic</b>	تبقى باردة	<b>French</b>	Tenir au frais
<b>Chinese</b>	保持低温	<b>Russian</b>	Хранить в прохладном месте
<b>English</b>	Keep cool	<b>Spanish</b>	Mantener fresco

# H & P Statements

More Harmonized?

Yes!

e.g., H340

English	May cause genetic defects
French	Peut induire des anomalies génétiques
German	Kann genetische Defekte verursachen
Japanese	遺伝性疾患のおそれ
Spanish	Puede provocar defectos genéticos

# H & P Statements

Not yet completely harmonized at country level

<b>Hazard / Precautionary Statement</b>	<b>Europe Directive No 1272/2008 ONU: SGA</b>	<b>Mexico NMX-R-019-SCFI-2011</b>
<b>H240</b>	Peligro de explosión en caso de calentamiento	Puede explotar al calentarse
<b>H290</b>	Puede ser corrosivo para los metales	Puede ser corrosiva para los metales
<b>H317</b>	Puede provocar una reacción alérgica en la piel.	Puede provocar una reacción cutánea alérgica
<b>P201</b>	Pedir instrucciones especiales antes del uso	Procurarse las instrucciones antes del uso
<b>P231</b>	Manipular en gas inerte	Manipular en un medio de gas inerte
<b>P270</b>	No comer, beber ni fumar durante su utilización	No comer, beber o fumar mientras se manipula este producto

# Example – SN洗淨剤 (n-hexane)

 未来材料に挑戦する		業務用	
<h1>SN洗淨剤</h1>			
製造番号		NET	kg
		<b>危険</b> 指針番号 : 128 国運番号 : 1208	
火気厳禁 危険物第四類 第一石油類 危険等級Ⅱ			
成分 : ノルマルヘキサン			
危険有害性情報			
<ul style="list-style-type: none"><li>●引火性の高い液体および蒸気。</li><li>●皮膚刺激。</li><li>●強い眼刺激。</li><li>●飲み込み、気道に侵入すると生命に危険のおそれ。</li><li>●生殖能又は胎児への悪影響のおそれの疑い。</li><li>●長期又は反復暴露による中枢神経系、末梢神経系の障害。</li><li>●呼吸器への刺激のおそれ。</li><li>●水生生物に毒性。</li><li>●眠気又はめまいのおそれ。</li></ul>			

H225  
H315  
H319  
H304  
H361

H335  
H401  
H336

# Example – Aceton

H225

H319

H336

EUH066

P210

P261

P305 + P351

+ P338

P337 + P313

P235 + P403

## Gefahrenhinweise:

Flüssigkeit und Dampf leicht entzündbar.

Verursacht schwere Augenreizung.

Kann Schläfrigkeit und Benommenheit verursachen.

Wiederholter Kontakt kann zu spröder oder rissiger Haut führen.

## Sicherheitshinweise:

Von Hitze, heißen Oberflächen, Funken, offenen Flammen sowie anderen Zündquellenarten fernhalten. Nicht rauchen.

Einatmen von Dampf vermeiden.

BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser ausspülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter ausspülen.

Bei anhaltender Augenreizung: Ärztlichen Rat einholen/ärztliche Hilfe hinzuziehen.

Kühl an einem gut belüfteten Ort aufbewahren.



# Aceton

Technisch reines  
Lösungs- und  
Reinigungsmittel



# Exemple – Acide acétique

## Acide acétique

$\text{CH}_3\text{-COOH}$  ;  $M=60,052 \text{ g/mol}$

$C > 90 \%$



**DANGER**

H226: Liquide et vapeurs inflammables

H314 (1A): Provoque des brûlures de la peau et des lésions oculaires graves

P210: Tenir à l'écart de la chaleur/des étincelles/des flammes nues/des surfaces chaudes-Ne pas fumer

P260: Ne pas respirer les poussières/fumées/gaz/brouillards/vapeurs/aérosols

P280: Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage

P305+P351+P338: EN CAS DE CONTACT AVEC LES YEUX : rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer

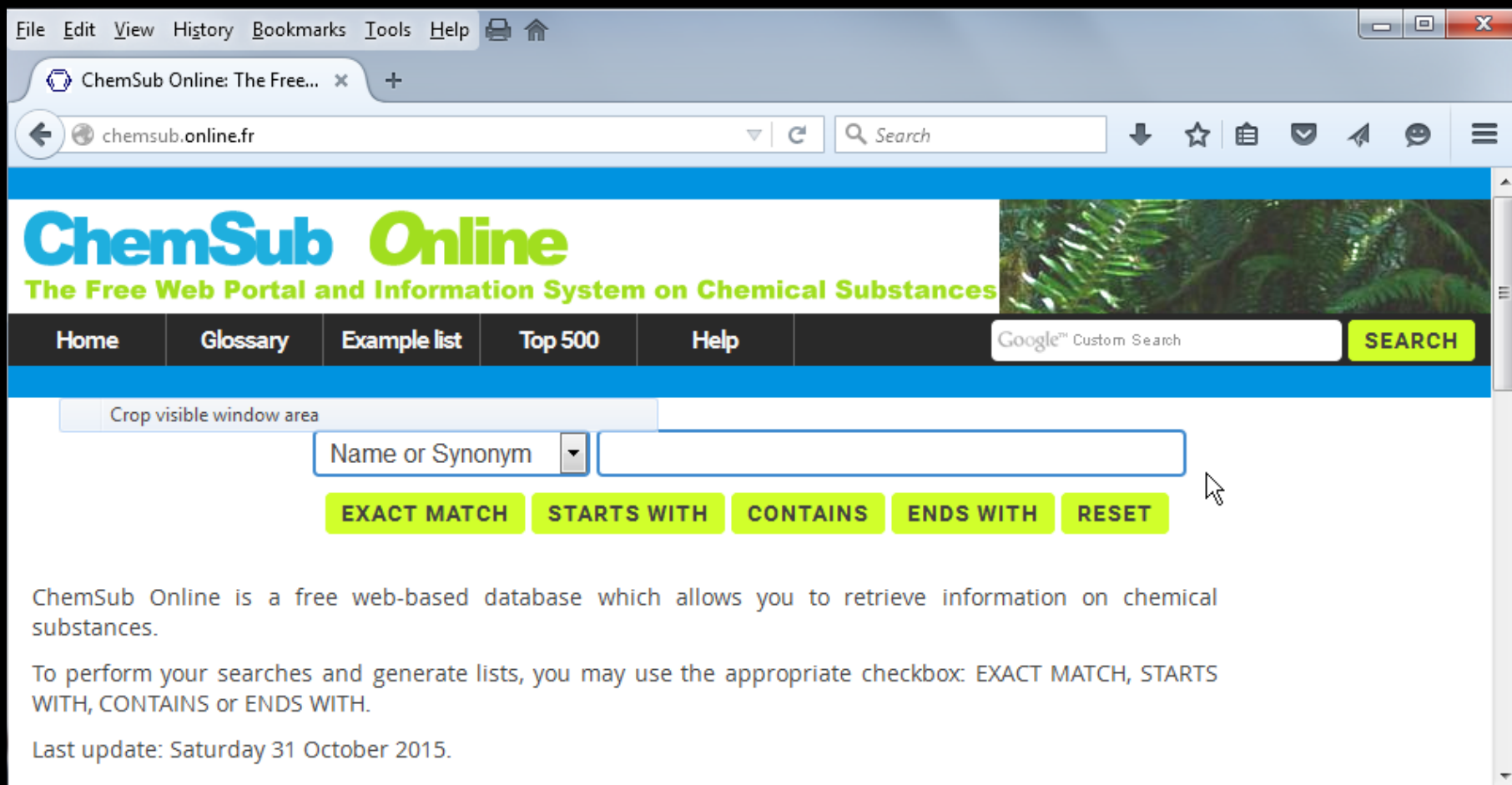
P310: Appeler immédiatement un CENTRE ANTIPOISON ou un médecin

N° CAS : 64-19-7

N° CE : 200-580-7

Crédits graphiques: Régimont, Topolab, Anpa, C. G. P. / G. P. / G. P.

# R/S & H/P Phrase Resources



The screenshot shows a web browser window with the URL [chemsub.online.fr](http://chemsub.online.fr). The page features a blue header with the ChemSub Online logo and the tagline "The Free Web Portal and Information System on Chemical Substances". A navigation menu includes links for Home, Glossary, Example list, Top 500, and Help. A search bar with a "SEARCH" button is also present. Below the navigation, there is a search interface with a dropdown menu for "Name or Synonym" and a search input field. Below the input field are five buttons: EXACT MATCH, STARTS WITH, CONTAINS, ENDS WITH, and RESET. The main content area contains a paragraph describing ChemSub Online as a free web-based database for retrieving chemical substance information, followed by instructions on how to use the search filters and the last update date: Saturday 31 October 2015.

Search on full or partial substance name to find equivalent names and synonyms, substance data and R/S and H/P phrase information in multiple languages

<http://chemsub.online.fr/>

# R/S & H/P Phrase Resources

**KEMINACO**

Risk & Safety Phrases | Hazard & Precautionary Statements | Sources | News | FAQ | Imprint

Use [Subvise](#) to spend less time tracking the REACH status of your chemicals!

## Chemical Hazard & Precautionary Statements

<ul style="list-style-type: none"><li>EUH001</li><li>EUH006</li><li>EUH014</li><li>EUH018</li><li>EUH019</li><li>EUH029</li><li>EUH031</li><li>EUH032</li><li>EUH044</li><li>EUH059</li><li>EUH066</li><li>EUH070</li><li>EUH071</li><li>EUH201</li><li>EUH201A</li><li>EUH202</li><li>EUH203</li><li>EUH204</li><li>EUH205</li><li>EUH206</li><li>EUH207</li><li>EUH208</li><li>EUH209</li><li>EUH209A</li><li>EUH210</li><li>EUH401</li><li>H200</li><li>H201</li><li>H202</li><li>H203</li><li>H204</li><li>H205</li><li>H206</li><li>H207</li><li>H208</li></ul>	<ul style="list-style-type: none"><li>P101</li><li>P102</li><li>P103</li><li>P201</li><li>P202</li><li>P210</li><li>P211</li><li>P212</li><li>P220</li><li>P221</li><li>P222</li><li>P223</li><li>P230</li><li>P231</li><li>P231 + P232</li><li>P232</li><li>P233</li><li>P234</li><li>P235</li><li>P235 + P410</li><li>P240</li><li>P241</li><li>P242</li><li>P243</li><li>P244</li><li>P250</li><li>P251</li><li>P260</li><li>P261</li><li>P262</li><li>P263</li><li>P264</li><li>P270</li><li>P271</li><li>P272</li></ul>	<ul style="list-style-type: none"><li>Arabic</li><li>Bulgarian</li><li>Chinese</li><li>Croatian</li><li>Czech</li><li>Dansk</li><li>Dutch</li><li>English</li><li>Estonian</li><li>Finnish</li><li>French</li><li>German</li><li>Greek</li><li>Hungarian</li><li>Indonesian</li><li>Irish</li><li>Italian</li><li>Japanese</li><li>Korean</li><li>Latvian</li><li>Lithuanian</li><li>Malay</li><li>Maltese</li><li>Norwegian</li><li>Polish</li><li>Portuguese</li><li>Romanian</li><li>Russian</li><li>Serbian</li><li>Slovak</li><li>Slovenian</li><li>Spanish</li><li>Swedish</li><li>Thai</li><li>Turkish</li></ul>
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No tables, please!

Search on H/P statement codes (R/S phrases too!) and language(s)

[ <http://schoolscout24.de/cgi-bin/keminaco/hppinput.cgi> ]



# What did we learn today?

- R & S Phrases / H & P Statements
- These phrases/statements belong in your TM
- Don't translate them literally – use the equivalents
- Found in many types of technical texts
- H/P statements standard now, but R/S phrases still turn up
- Resources

# R/S & H/P Phrase Resources

## 1

**MSDS Hyperglossary**, links to English keyword definitions [ [www.ilpi.com/msds/ref/](http://www.ilpi.com/msds/ref/) ]:  
Risk Phrases (R-phrases) [ [www.ilpi.com/msds/ref/riskphrases.html](http://www.ilpi.com/msds/ref/riskphrases.html) ]  
Safety Phrases (S-phrases) [ [www.ilpi.com/msds/ref/safetyphrases.html](http://www.ilpi.com/msds/ref/safetyphrases.html) ]  
Hazard statements (H statements) [ [www.ilpi.com/msds/ref/hstatements.html](http://www.ilpi.com/msds/ref/hstatements.html) ]  
Precaution statements (P statements) [ [www.ilpi.com/msds/ref/pstatements.html](http://www.ilpi.com/msds/ref/pstatements.html) ]

### **MSDS Europe (CLP)**

R & S phrases, H & P statements, select language on the right:  
(CZ, DE, EN, ES, FR, HR, HU, IT, PL, RO, RU, SK, SL)  
[ [www.msds-europe.com/kateg-161-1-msds\\_information.html](http://www.msds-europe.com/kateg-161-1-msds_information.html) ]

### **Keminaco (CLP), Chemical Risk & Safety Phrases** (Martin Michel of Berlin, Germany)

in 23 European languages, can output tables

(BG, CZ, DA, DE, EL, EN, ES, ET, FI, FR, HU, IT, LV, MT, NL, NO, PL, PT, RO, SK, SL, SV)

R&S phrases: [ [schoolscout24.de/cgi-bin/rsp/rspinput.cgi](http://schoolscout24.de/cgi-bin/rsp/rspinput.cgi) ]

H&P statements: [ [schoolscout24.de/cgi-bin/hpp/hppinput.cgi](http://schoolscout24.de/cgi-bin/hpp/hppinput.cgi) ]

# R/S & H/P Phrase Resources

## 2

### **ChemSub Online**

Substance name search

find chemical name synonyms and R/S H/P information

click on the R/S-phrase or H/P statement for language equivalents

[ [chemsub.online.fr](http://chemsub.online.fr) ]

### **EU CLP Hazard and Precautionary Statements in 24 EU languages**

[BG, CS, DA, DE, EL, EN, ES, ET, FI, FR, GA, HR, HU, IT, LV, LT, MT, NL, PL, PT, RO, SK, SL, SV]

[ [ec.europa.eu/enterprise/sectors/chemicals/files/ghs/signalwords\\_hs\\_ps\\_en.xls](http://ec.europa.eu/enterprise/sectors/chemicals/files/ghs/signalwords_hs_ps_en.xls) ]

### **Wikipedia articles** with lists & links to other languages:

[en.wikipedia.org/wiki/List\\_of\\_R-phrases](http://en.wikipedia.org/wiki/List_of_R-phrases)

[en.wikipedia.org/wiki/List\\_of\\_S-phrases](http://en.wikipedia.org/wiki/List_of_S-phrases)

[en.wikipedia.org/wiki/GHS\\_hazard\\_statement](http://en.wikipedia.org/wiki/GHS_hazard_statement)

[en.wikipedia.org/wiki/GHS\\_precautionary\\_statements](http://en.wikipedia.org/wiki/GHS_precautionary_statements)

**Emergency Response Guidebook** (North America, references for chemical nomenclature, first aid, emergency responses, public safety and hygiene, etc.)

EN: <http://tinyurl.com/nx9vmxl>

ES: <http://tinyurl.com/ofwmsfh>

FR: <https://www.tc.gc.ca/media/documents/canutec-fra/GMU2012.pdf>

# R/S & H/P Phrase Resources

## 3

### Standards publications and other information sources:

Text of **Council Directive 2006/102/EC (CLP)**, in European languages, Nov., 2006)  
[ [eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L\\_.2006.363.01.0241.01.ENG](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2006.363.01.0241.01.ENG) ]

**Globally Harmonized System** of Classification and Labeling of Chemicals (GHS)

UN [ [www.unece.org/trans/danger/publi/ghs/ghs\\_welcome\\_e.html](http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html) ]

US [ [www.osha.gov/dsg/hazcom/global.html](http://www.osha.gov/dsg/hazcom/global.html) ]

UK [ [www.hse.gov.uk/chemical-classification/index.htm](http://www.hse.gov.uk/chemical-classification/index.htm) ]

JP [ [www.meti.go.jp/policy/chemical\\_management/int/ghs\\_text.html](http://www.meti.go.jp/policy/chemical_management/int/ghs_text.html) ]

**Norma Mexicana**, Sistema Armonizado de Clasificación y Comunicación de Peligros de los Productos Químicos.

[ [trabajoseguro.stps.gob.mx/trabajoseguro/boletinesanteriores/2011/bol039/vinculos/NMX-R-019-SCFI-2011.pdf](http://trabajoseguro.stps.gob.mx/trabajoseguro/boletinesanteriores/2011/bol039/vinculos/NMX-R-019-SCFI-2011.pdf) ]

**European Chemicals Agency** "Chemical Labels are Changing" (European languages):

[ [ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7639&furtherPubs=yes](http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=7639&furtherPubs=yes) ]

**Hazard  
statement****Europe  
Directive No 1272/2008  
ONU: SGA****Mexico  
NMX-R-019-SCFI-2011**

<b>H240</b>	Peligro de explosión en caso de calentamiento	Puede explotar al calentarse
<b>H241</b>	Peligro de incendio o explosión en caso de calentamiento.	Puede incendiarse o explotar al calentarse
<b>H242</b>	Peligro de incendio en caso de calentamiento	Puede incendiarse al calentarse
<b>H290</b>	Puede ser corrosivo para los metales	Puede ser corrosiva para los metales
<b>H314</b>	Provoca quemaduras graves en la piel y lesiones oculares graves	Provoca graves quemaduras en la piel y lesiones oculares graves
<b>H317</b>	Puede provocar una reacción alérgica en la piel.	Puede provocar una reacción cutánea alérgica
<b>H330</b>	Mortal en caso de inhalación	Mortal si se inhala
<b>H331</b>	Tóxico en caso de inhalación	Tóxico si se inhala
<b>H332</b>	Nocivo en caso de inhalación	Nocivo si se inhala
<b>H341</b>	Se sospecha que provoca defectos genéticos	Susceptible de provocar defectos genéticos
<b>H351</b>	Se sospecha que provoca cáncer	Susceptible de provocar cáncer
<b>H361</b>	Se sospecha que perjudica la fertilidad o daña al feto	Susceptible de perjudicar la fertilidad o dañar al feto
<b>H362</b>	Puede perjudicar a los niños alimentados con leche materna	Puede ser nocivo para los lactantes

**Precautionary  
statement**

**Europe  
Directive No 1272/2008  
ONU: SGA**

**Mexico  
NMX-R-019-SCFI-2011**

<b>P101</b>	Si se necesita consejo médico, tener a mano el envase o la etiqueta.	Si se necesita consejo médico, tener a mano el recipiente o la etiqueta del producto.
<b>P201</b>	Pedir instrucciones especiales antes del uso	Procurarse las instrucciones antes del uso
<b>P223</b>	Mantener alejado de cualquier posible contacto con el agua, pues reacciona violentamente y puede provocar una llamarada.	Evitar todo, contacto con el agua, por el riesgo de reacciones violentas y una posible inflamación instantánea.
<b>P230</b>	Matener humedecido con...	Mantener humidificado con...
<b>P231</b>	Manipular en gas inerte	Manipular en un medio de gas inerte
<b>P235</b>	Mantener en un lugar fresco	Mantener fresco
<b>P240</b>	Conetcatar a tierra/enlace equipotencial del recipiente y del equipo de recepción	Toma de tierra/enlace equipotencial del recipiente y del equipo receptor
<b>P242</b>	Utilizar únicamente herramientas que no produzcan chispas	No utilizar herramientas que produzcan chispas
<b>P243</b>	Tomar medidas de precaución contra descargas electrostáticas	Tomar medidas de precaución contra las descargas electrostáticas
<b>P250</b>	Evitar la abrasión/el choque/.../la fricción	Evitar abrasiones/choques/.../fricciones
<b>P251</b>	Recipiente a presión: no perforar ni quemar, aun después del uso.	Recipiente a presión: no perforar ni quemar, incluso después del uso.
<b>P260</b>	No respirar el polvo/el humo/el gas/la niebla/los vapores/el aerosol	No respirar polvos/humos/gases/nieblas/vapores/aerosoles
<b>P261</b>	Evitar respirar el polvo/el humo/el gas/la niebla/los vapores/el aerosol	Evitar respirar polvos/humos/gases/nieblas/vapores/aerosoles
<b>P262</b>	Evitar el contacto con los ojos, la piel o la ropa	Evitar todo contacto con los ojos, la piel o la ropa
<b>P263</b>	Evitar el contacto durante el embarazo/la lactancia	Evitar todo contacto con la sustancia durante el embarazo/la lactancia
<b>P264</b>	Lavarse ... concienzudamente tras la manipulación	Lavarse ... cuidadosamente después de la manipulación
<b>P270</b>	No comer, beber ni fumar durante su utilización	No comer, beber o fumar mientras se manipula este producto
<b>P271</b>	Utilizar únicamente en exteriores o en un lugar bien ventilado	Utilizar solo al aire libre o en un lugar bien ventilado

# How to Read and Translate Risk and Safety Vernacular Phrases in Technical Texts

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Miami - 6 November 2015



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